

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Study of methods to increase cluster/dislocation loop densities in electrodes XIAOLING YANG, GEORGE H. MILEY, University of Illinois, Urbana-Champaign, NPL Associates, Champaign, IL — Recent research has developed a technique for imbedding ultra-high density deuterium “clusters” (50 to 100 atoms per cluster) in various metals such as Palladium (Pd), Beryllium (Be) and Lithium (Li). It was found the thermally dehydrogenated PdH_x retained the clusters and exhibited up to 12 percent lower resistance compared to the virginal Pd samples¹. SQUID measurements showed that in Pd these condensed matter clusters approach metallic conditions, exhibiting superconducting properties²³. If the fabrication methods under study are successful, a large packing fraction of nuclear reactive clusters can be developed in the electrodes by electrolyte or high pressure gas loading. This will provide a much higher low-energy-nuclear- reaction (LENR) rate than achieved with earlier electrode⁴.

¹A. G. Lipson, et al. Phys. Solid State. 39 (1997) 1891

²A. Lipson, et al. Phys. Rev. B 72, 212507 (2005)

³A. G. Lipson, et al. Phys. Lett. A 339, (2005) 414-423

⁴Castano, C.H., et al. Proc. ICCF-9, Beijing, China 19-24 May, 2002.

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Date submitted: 09 Dec 2008

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